

Application No. 10/082,087
Docket No. FQ5-574

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AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows. Please cancel claims 7-13, 15-16 and 18-19 without prejudice or disclaimer. Please add new claims 21-26.

1. (Original) A multiple access communications system comprising:
a master station; and
a plurality of slave stations, each of which is connected to the master station using a multiple access controlled uplink and a broadcasting downlink and is connected to at least one terminal, wherein each of the slave stations comprises:
a transmission buffer for storing data received from a terminal as uplink transmission packets;
a condition memory storing a transmission condition for packet concatenation;
a packet concatenation section for concatenating a plurality of uplink transmission packets stored in the transmission buffer within a range satisfying the transmission condition, to produce a concatenated uplink transmission packet; and
a transmitter for transmitting the concatenated uplink transmission packet to the master station.

2. (Original) The multiple access communications system according to claim 1, wherein the packet concatenation section concatenates a plurality of uplink transmission packets within an upper limit to number of uplink transmission packets determined by the transmission condition.

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3. (Original) The multiple access communications system according to claim 1, wherein the packet concatenation section concatenates a plurality of uplink transmission packets within an upper limit to a total amount of uplink transmission packets determined by the transmission condition.

4. (Original) The multiple access communications system according to claim 1, wherein the transmission condition is previously set such that concatenation of the plurality of uplink transmission packets is performed only when a total amount of first additional information that would be added if the uplink transmission packets are individually transmitted is not smaller than an amount of second additional information that would be added if the concatenated uplink transmission packet is transmitted, wherein the packet concatenation section concatenates the plurality of uplink transmission packets when the transmission condition is satisfied.

5. (Original) The multiple access communications system according to claim 4, wherein the slave station further comprises:
a table memory storing a table containing correspondence between a packet data size and an amount of additional information to be added when individually transmitted,
wherein the table is used to determine whether the total amount of first additional information is not smaller than the amount of second additional information.

6. (Original) The multiple access communications system according to

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claim 4, wherein the slave station further comprises:

a table memory storing a table containing correspondence between a packet data size, a number of packets to be concatenated, an amount of additional information to be added when concatenated, and

wherein the table is used to determine whether the total amount of first additional information is not smaller than the amount of second additional information.

Claims 7-13. (Canceled.)

14. (Currently Amended) A data transceiver connected between a master station and at least one terminal to transfer data between the master station and the at least one terminal, comprising:

a transmission[[t]] buffer for storing data received from a terminal as uplink transmission packets;

a condition memory storing a transmission condition for packet concatenation; a packet concatenation section for concatenating a plurality of uplink transmission packets stored in the transmission buffer within a range satisfying the transmission condition, to produce a concatenated uplink transmission packet; and a transmitter for transmitting the concatenated uplink transmission packet to the master station.

Claims 15-16. (Canceled)

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17. (Currently Amended) A method for transferring data between a master station and at least one fixed speed data terminal, comprising the steps of:

storing a transmission condition for packet concatenation;

storing data received from a terminal as uplink transmission packets;

concatenating a plurality of uplink transmission packets stored in the transmission buffer within a range satisfying [[a]] the transmission condition for packet concatenation, to produce a concatenated uplink transmission packet; and

transmitting the concatenated uplink transmission packet to the master station.

Claims 18-19. (Canceled.)

20. (Currently Amended) A multiple access communication method between a master station and a plurality of slave stations, each of which is connected to the master station using an uplink and a downlink and is connected to at least one terminal, comprising the steps of:

at a slave station[[s]],

generating a plurality of data packets from data received from the at least one terminal;

transmitting a transmission request packet containing a total amount of data packets to be concatenated to the master station;

at the master station,

in response to the transmission request packet, transmitting a transmission permission packet containing a total amount of data packets permitted to be

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concatenated to the slave station;

at the slave station,

concatenating a plurality of uplink transmission data packets within a predetermined range to produce a concatenated uplink transmission data packet; and transmitting the concatenated uplink transmission data packet to the master station.

21. (New) An apparatus for transferring data between a master station and at least one fixed speed data terminal, comprising:

storing means for storing a transmission condition for packet concatenation and for storing received data from a terminal as uplink transmission packets; concatenating means for concatenating a plurality of uplink transmission packets stored in the transmission buffer within a range satisfying the transmission condition for packet concatenation, to produce a concatenated uplink transmission packet; and

transmitting means for transmitting the concatenated uplink transmission packet to the master station.

22. (New) A method for controlling a multiple access communications system including a master station and a plurality of slave stations each of which is connected to said master station using a multiple access controlled uplink and a broadcasting downlink, said method comprising:

storing data in a transmission buffer received from a terminal as uplink

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transmission packets;

storing a transmission condition for packet concatenation in a condition memory;

concatenating, a plurality of uplink transmission packets stored in said transmission buffer within a range satisfying said transmission condition;

producing a concatenated uplink transmission packet based on said concatenating; and

transmitting said concatenated uplink transmission packet to said master station.

23. (New) A method for controlling a data transceiver connected between a master station and at least one terminal to transfer data between the master station and the at least one terminal, said method comprising:

storing data in a transmission buffer received from a terminal as uplink transmission packets;

storing a transmission condition for packet concatenation in a condition memory;

concatenating a plurality of uplink transmission packets stored in the transmission buffer within a range satisfying the transmission condition;

producing a concatenated uplink transmission packet based on said concatenating; and

transmitting said concatenated uplink transmission packet to said master station.

24. (New) A multiple access communication method between a master

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station and a plurality of slave stations, each of which is connected to the master station using an uplink and a downlink and is connected to at least one terminal, comprising:

at a slave station
generating a plurality of data packets from data received from the at least one terminal;
transmitting a transmission request packet containing a total amount of data packets to be concatenated to a master station;
concatenating a plurality of uplink transmission data packets within a predetermined range to produce a concatenated uplink transmission data packet; and
transmitting the concatenated uplink transmission data packet to the master station.

25. (New) The multiple access communication method of claim 24, comprising:

at the master station,
in response to the transmission request packet, transmitting a transmission permission packet containing a total amount of data packets permitted to be concatenated to the slave station.

26. (New) The method for transferring data according to claim 17, wherein said transmission condition for packet concatenation is stored in a dedicated memory.